

## Claims

- [c1] An air dryer mounting assembly comprising:
  - an air dryer including a manifold and a desiccant cartridge;
  - a bore running through said manifold; and
  - a fastener disposed in said bore, wherein air flow passing through the air dryer intersects the bore and communicates to a purge volume.
- [c2] The air dryer mounting assembly of claim 1 further comprising a reservoir which houses said purge volume, wherein said fastener connects said air dryer to said reservoir.
- [c3] The air dryer mounting assembly of claim 2 further comprising a means for stabilizing the air dryer and preventing rotation of the air dryer about its central axis.
- [c4] The air dryer mounting assembly of claim 3, wherein said means for stabilizing the air dryer is a set of two or more arms protruding from said manifold and a projection extending from a surface of the reservoir, wherein said projection rests between said arms and prevents rotation of said air dryer when said air dryer is secured

to said reservoir.

- [c5] The air dryer mounting assembly of claim 3, wherein said means for stabilizing the air dryer is a bolt received by a threaded member.
- [c6] The air dryer mounting assembly of claim 1, wherein said assembly is used in connection with a commercial vehicle air brake system.
- [c7] The air dryer mounting assembly of claim 1, wherein said desiccant cartridge contains a set of threads which are used to thread the cartridge onto a set of corresponding threads located on said manifold.
- [c8] The air dryer mounting assembly of claim 7, wherein said set of threads and said set of corresponding threads are 41 mm.
- [c9] The air dryer mounting assembly of claim 2 wherein said reservoir further comprises:
  - a reservoir including a first passageway for transmitting first dried compressed air between said air dryer and the purge volume; and
  - a second passageway for transmitting second dried compressed air between said dryer and a downstream component, the second dried compressed air being transmitted between the air dryer and the downstream

component without passing through the purge chamber.

- [c10] An air dryer comprising:
  - a manifold, wherein said manifold includes a bore for insertion of a mounting fastener; and
  - a spin-on desiccant cartridge,
  - wherein said manifold bore communicates air between the air dryer and a purge volume.
- [c11] An air dryer for a commercial vehicle comprising:
  - a manifold;
  - a desiccant cartridge mounted on said manifold; and
  - a fastener disposed within a bore running through said manifold;
  - wherein said fitting is secured to a reservoir.
- [c12] The air dryer of claim 11, wherein said bore is in communication with an air flow path in said air dryer and a purge volume disposed within said reservoir.
- [c13] The air dryer of claim 11 further comprising means for prohibiting rotation of the air dryer.
- [c14] A method of mounting an air dryer, comprising the steps of:
  - aligning an air dryer with a reservoir such that one or more stabilizing mechanisms interlock to prevent rotation of the air dryer relative to the reservoir;

inserting a fastener through the manifold and into a threaded member in the reservoir; and tightening said fastener to said reservoir.

- [c15] A method of drying air in a compressed air system of a vehicle, comprising the steps of:
  - delivering a flow of air to an air dryer manifold with a desiccant bed canister attached thereto;
  - passing said flow of said air through the desiccant bed, thereby drying the air;
  - delivering the dried air to a set of downstream components;
  - purging the desiccant bed with a purge flow from a purge volume to regenerate the desiccant bed; and exhausting said purge flow after it has passed through said desiccant bed;
  - wherein said purge flow passes from said purge volume via a bore in said manifold in which a fastener securing said air dryer to the vehicle is disposed.
- [c16] An air dryer assembly comprising:
  - an air dryer including a manifold and desiccant cartridge;
  - and
  - a means for securing said air dryer to an air reservoir, wherein said air reservoir includes a purge volume;
  - wherein means for securing said air dryer includes a means for communicating air between said air dryer and

said purge volume.

- [c17] An air dyer mounting assembly comprising:
  - an air dryer including a manifold and desiccant cartridge;
  - a single fastener for securing said manifold to a vehicle;
  - and
  - an anti-rotation mechanism that prevents rotation of the air dryer when said air dryer is secured to the vehicle.
- [c18] An air dryer mounting assembly comprising:
  - an air dryer;
  - a single means for securing said air dryer to a purge reservoir; and
  - a means for preventing rotation of the air dryer when said air dryer is secured to the purge reservoir.
- [c19] The air dryer mounting assembly of claim 18, wherein said anti-rotation mechanism is a second fastener.
- [c20] The air dryer mounting assembly of claim 19, wherein said second fastener is placed through a bore on an extension disposed on said manifold.
- [c21] An air dryer mounting assembly comprising:
  - an air dryer including a manifold and desiccant cartridge;
  - and
  - a reservoir, wherein said air dryer is coupled to said reservoir, wherein said reservoir includes a mounting

bracket that is coupled to a rail of a vehicle, said rail of a vehicle having a height; wherein said mounting bracket includes a height that is less than 75 percent of said rail height.

- [c22] The air dryer mounting assembly of claim 22, wherein said mounting bracket height is less than 50 percent of said rail height.